In the Claims

1. (Previously Presented) A method for producing a plasma display, comprising applying, in stripes between barrier ribs, a phosphor paste containing a phosphor powder and an organic compound onto a substrate having a plurality of the barrier ribs formed thereon, from a multiplicity of outlet holes, of an average diameter of 10 to 500 μm, contained in a nozzle deposition system for at least one color of red, green or blue phosphor paste such that the paste flow from all of the holes for the color(s) of the phosphor paste at the same time and between the barrier ribs.

2. (Previously Presented) A method for producing a plasma display, comprising coating a substrate having a plurality of adjacent barrier ribs, with three phosphor pastes respectively containing a phosphor powder emitting light of red, green or blue, as stripes in spaces between said respectively adjacent barrier ribs, from a multiplicity of outlet holes, of an average diameter of 10 to 500 μm, contained in a nozzle deposition system for at least one color of red, green or blue phosphor paste such that the paste flows from all of the holes for the color(s) of the phosphor paste at the same time and between the barrier ribs, and heating to form a phosphor layer.

Claims 3 – 32 (Cancelled)

33. (Previously Presented) An apparatus for producing a plasma display, comprising a nozzle deposition system having a multiplicity of outlet holes, of an average diameter of 10 to 500 μm, for at least one color of red, green or blue to face a plurality of spaced apart barrier ribs located on a substrate, wherein a phosphor paste supply is operatively connected to the nozzle deposition system to supply paste to the substrate from all of the holes for the color(s) at the same time, and a means for moving the substrate and the nozzle deposition system relative to each other.

Claims 34 - 57(Cancelled)

58. (Previously Presented) An apparatus for producing a plasma display, comprising three coating devices provided in series to deliver three phosphor pastes, said coating device comprising a nozzle deposition system with a multiplicity of outlet holes, of an average diameter of 10 to 500 μm, for at least one color of red, green or blue arranged to face the barrier ribs of the substrate, a supply means for supplying phosphor pastes to the nozzle deposition system such that paste flows from all of the holes for the color(s) of red, green and blue phosphor paste at the same time, and wherein a moving means for moving the substrate and the nozzle deposition system relative to each other, is provided.

Claims 59 - 60(Cancelled)

61. (New) A method for producing a plasma display comprising applying a phosphor paste containing a phosphor powder and an organic compound onto a substrate having a plurality of barrier ribs formed thereon, from 150 to 2000 outlet holes of an average diameter of 10 to 500 μm formed at a pitch of 0.12 to 3 mm, contained in a nozzle for one color of red, green or blue phosphor paste such that the paste flows from all the holes for the color of the phosphor paste at the same time between the barrier ribs.

62. (New) The method according to claim 61, comprising coating the substrate with three phosphor pastes respectively containing a phosphor powder emitting light of red, green or blue, and then heating the pastes to form a phosphor layer.

63. (New) The method according to claim 61, wherein spaces (S) between respectively adjacent barrier ribs and the average diameter (D) of the outlet holes satisfy the following formula:

$$10\ \mu m \leq D \leq S \leq 500\ \mu m.$$

64. (New) The method according to claim 61, wherein the outlet holes are formed in a

flat plate, nozzles or needles.

65. (New) The method according to claim 61, wherein the nozzle has 16n ± 5 (n is a natural number) outlet holes.

66. (New) The method according to claim 61, wherein the nozzle has the outlet holes at a pitch corresponding to 3m times (m is an integer of 1 to 10) the pitch of the barrier ribs.

67. (New) The method according to claim 61, wherein the nozzle satisfies the following formula:

$$L/D = 0.1 \sim 600$$

where L is the length of the outlet holes, and D is the average diameter of the outlet holes.

68. (New) The method according to claim 61, wherein the average diameter (D) of the outlet holes is 60 to 400 μm.

69. (New) The method according to claim 61, wherein the fluorescent pastes are applied while the distance between top ends of the barrier ribs and tips of the outlet holes is kept at 0.01 to 2 mm.

70. (New) The method according to claim 61, wherein pastes respectively containing a fluorescent material different in color of light emitted therefrom are discharged from one nozzle, and the shortest distance between the outlet holes discharging fluorescent pastes mutually different in color is 600 μm or more.

71. (New) The method according to claim 61, wherein two or more nozzles are simultaneously used for coating.

72. (New) The method according to claim 71, wherein the two or more nozzles travel at the same speed.

73. (New) The method according to claim 62, wherein coating is effected one color by

one color, and the coating of each color is followed by drying.

74. (New) The method according to claim 61, wherein the nozzle and the glass substrate are moved relative to each other in parallel to the barrier ribs.

75. (New) The method according to claim 61, wherein the nozzle produces a negative internal pressure to stop discharge of the fluorescent pastes.

76. (New) The method according to claim 61, wherein after the nozzle and the substrate have started relative movement in parallel to the barrier ribs, discharge of fluorescent pastes is started, and before the relative movement is stopped, the discharge is stopped.

77. (New) The method according to claim 61, wherein the fluorescent pastes comprise powder of 0.5 to 10 μm in grain size for 50 wt% of the powder and 0.1 to 2 m^2/g in specific surface area.

78. (New) The method according to claim 61, wherein each of the fluorescent pastes comprise 30 to 60 wt% of a fluorescent powder, 5 to 20 wt% of a binder resin and a solvent, wherein the ratio by weight of the fluorescent powder to the binder resin is 6:1 ~ 3:1.

79. (New) The method according to claim 78, wherein the binder resin is a cellulose compound.

80. (New) The method according to claim 78, wherein the solvent contains terpineol.

81. (New) The method according to claim 62, wherein fluorescent materials existing in portions other than predetermined coating positions are removed by letting them adhere to an adhesive material.

82. (New) The method according to claim 61, wherein fluorescent materials deposited at top ends of the barrier ribs are removed by letting them adhere to an adhesive material and then removing the adhesive material from the barrier ribs.

83. (New) The method according to claim 61, wherein each of the fluorescent pastes satisfies the following relation:

$$(2H + P - W) \times 5 \leq H \times (P - W) \times a/100 \leq (2H + P - W) \times 30$$

wherein H is the height of each barrier rib (μm); P is the pitch of the barrier ribs (μm); W is the width of each barrier rib (μm); and a is the fluorescent powder content of the fluorescent paste (vol%).

84. (New) The method according to claim 61, wherein the fluorescent pastes have a viscosity of 2 to 50 Pa•s.

85. (New) The method according to claim 61, wherein the fluorescent pastes are photosensitive fluorescent pastes.

86. (New) The method according to claim 85, wherein each of the photosensitive fluorescent pastes has the following composition:

Organic component	:	15 ~ 60 parts by weight;
Fluorescent powder	:	40 ~ 85 parts by weight; and
Solvent	:	10 ~ 50 parts by weight.

87. (New) The method according to claim 62, wherein the barrier rib layer is provided as stripes with the following dimensions:

Pitch	:	100 ~ 250 μm;
Width	:	15 ~ 40 μm; and
Height	:	60 ~ 170 μm.

88. (New) The method according to claim 61, wherein the barrier ribs are black on their top surfaces.

89. (New) The method according to claim 61, wherein the lateral side wall thickness (T1) of the fluorescent material layer at a position corresponding to half of the height of each barrier rib and the bottom wall thickness (T2) of the fluorescent material layer satisfy the following relation:

$10 \leq T1 \leq 50$ μm;

$10 \leq T2 \leq 50$ μm; and

$0.2 \leq T1/T2 \leq 5$.

90. (New) The method according to claim 61, wherein the average diameter of the outlet holes is less than spaces between the barrier ribs.

91. (New) The method according to claim 61, wherein the paste is confined between the barrier ribs.

92. (New) An apparatus for producing a plasma display comprising a nozzle having 150 to 2000 holes of an average diameter of 10 to 500 μm at a pitch of 0.12 to 3 mm, for one color of red, green or blue to face a plurality of spaced apart barrier ribs located on a substrate, a phosphor paste supply operatively connected to the nozzle to supply paste to the substrate from all of the holes for the color(s) at the same time, and means for moving the substrate and the nozzle relative to each other.

93. (New) The apparatus according to claim 92, wherein the relation between the average diameter (D) of the holes and the space (S) between respectively adjacent barrier ribs satisfies the following formula:

$10\ \mu m \leq D \leq S \leq 500\ \mu m$.

94. (New) The apparatus according to claim 92, wherein the holes are not circularly formed, and the length (B) of each of the holes perpendicular to the barrier ribs and a space (S) between respectively adjacent barrier ribs satisfy the following relation:

$$10\ \mu m \leq B \leq S \leq 500\ \mu m.$$

95. (New) The apparatus according to claim 92, wherein the pitch of the holes is 3m times (m is an integer of 1 to 10) the pitch of the barrier ribs.

96. (New) The apparatus according to claim 92, wherein the holes are on the same plane.

97. (New) The apparatus according to claim 92, wherein the holes are formed by pipes with the same form.

98. (New) The apparatus according to claim 92, wherein the number of holes is $16n \pm 5$ (n is a natural number).

99. (New) The apparatus according to claim 92, wherein the average diameter (D) of the holes and the length (L) of each of the holes satisfy the following relation:

$$L/D = 0.1 \sim 600.$$

100. (New) The apparatus according to claim 92, wherein the average diameter of the holes is 60 to 400 μm.

101. (New) The apparatus according to claim 92, wherein centers of the holes are located above spaces between respectively adjacent barrier ribs.

102. (New) The apparatus according to claim 92, wherein faces and/or inner walls of the holes are coated with a fluorine based resin.

103. (New) The apparatus according to claim 92, wherein faces and/or inner walls of the holes are coated with an amorphous carbon.

104. (New) The apparatus according to claim 92, wherein the nozzle comprises a plurality of fluorescent paste storage sections, fluorescent paste supply ports for supplying fluorescent paste to the storage sections, and passages for fluid communication between the storage sections and the holes; the number of holes is larger than the number of storage sections; and the holes corresponding to respective storage sections are arranged cyclically according to a predetermined order.

105. (New) The apparatus for producing a plasma display according to claim 92, further comprising a plurality of nozzle for respectively different fluorescent pastes, and a plurality of fluorescent paste supply devices are provided to supply the fluorescent pastes for the respective nozzle, so that spaces between the barrier ribs may be simultaneously coated with the plurality of fluorescent pastes.

106. (New) The apparatus according to claim 92, further comprising a pressure adjuster capable of setting the pressure in a range from atmospheric pressure to a negative pressure, and a controller to control the timing of pressure adjustment.

107. (New) The apparatus according to claim 92, further comprising a detector for detecting positions of the holes, a detector for detecting positions of the barrier ribs or spaces between the barrier ribs, a detector for detecting position of top ends of the barrier ribs, a detector for detecting position of tips of the holes and a controller for controlling start and end of discharge of the fluorescent paste in response to a relative position between the holes and the substrate.

108. (New) The apparatus according to claim 92, further comprising an adjusting means for adjusting the inclination degree of the nozzles to the top ends of the barrier ribs of the substrate, and a controller for keeping the tips of the holes of the nozzles at a predetermined distance substantially parallel to the top ends of the barrier ribs of the substrate.

109. (New) The apparatus according to claim 92, further comprising a detector for detecting the position of fluorescent paste discharged onto the substrate.

110. (New) The apparatus according to claim 92, further comprising a detector for detecting a number of the barrier ribs or spaces between the barrier ribs, and a recognizing means for recognizing the spaces between the barrier ribs to be coated, from a detected number of the barrier ribs or the spaces between the barrier ribs.

111. (New) The apparatus according to claim 92, wherein a reference mark detector for detecting a reference mark on the substrate, and a mover and controller for relatively moving the nozzle and the barrier ribs so that the holes may be located above spaces between the barrier ribs to be coated with the fluorescent paste.

112. (New) The apparatus according to claim 92, further comprising a means for cleaning hole faces.

113. (New) The apparatus according to claim 92, further comprising a means for removing the fluorescent paste existing in other portions than predetermined coating positions of the substrate.

114. (New) An apparatus according to claim 92, comprising three nozzles provided in series to deliver three phosphor pastes.

115. (New) The apparatus according to claim 92, wherein the average diameter of the holes is less than spaces between the barrier ribs.

116. (New) The apparatus according to claim 92, wherein the paste is confined between the barrier ribs.

117. (New) A method for producing a plasma display, comprising applying, in stripes between barrier ribs, a phosphor paste containing a phosphor powder and an organic compound onto

a substrate having a plurality of the barrier ribs formed thereon, from a multiplicity of outlet holes, of an average diameter of 10 to 500 μm, contained in a nozzle deposition system for at least one color of red, green or blue phosphor paste such that the paste flows from all of the holes for the color(s) of the phosphor paste at the same time and between the barrier ribs and the paste only flows from each individual hole into a corresponding space between adjacent ribs.

118. (New) A method for producing a plasma display, comprising coating a substrate having a plurality of adjacent barrier ribs, with three phosphor paste respectively containing a phosphor powder emitting light of red, green or blue, as stripes in spaces between said respectively adjacent barrier ribs, from a multiplicity of outlet holes, of an average diameter of 10 to 500 μm, contained in a nozzle deposition system for at least one color of red, green or blue phosphor paste such that the paste flows from all of the holes for the color(s) of the phosphor paste at the same time and between the barrier ribs and the paste only flows from each individual hole into a corresponding space between adjacent ribs, and heating to form a phosphor layer

119. (New) An apparatus for producing a plasma display, comprising a nozzle deposition system having a multiplicity of outlet holes, of an average diameter of 10 to 500 μm, for at least one color of red, green or blue to face a plurality of spaced apart barrier ribs located on a substrate, wherein a phosphor paste supply is operatively connected to the nozzle deposition system to supply paste to the substrate from all of the holes for the color(s) at the same time and to supply paste only from each individual hole into a corresponding space between adjacent ribs, and a means for moving the substrate and the nozzle deposition system relative to each other.

120. (New) An apparatus for producing a plasma display, comprising three coating devices provided in series to deliver three phosphor pastes, said coating device comprising a nozzle deposition system with a multiplicity of outlet holes, of an average diameter of 10 to 500 μm, for

at least one color of red, green or blue arranged to face the barrier ribs of the substrate, a supply means for supplying phosphor pastes to the nozzle deposition system such that paste flows from all of the holes for the color(s) of red, green and blue phosphor paste at the same time and the paste only flows from each individual hole into a corresponding space between adjacent ribs, and wherein a moving means for moving the substrate and the nozzle deposition system relative to each other, is provided.